

BEST Portfolio Performance Rubric for Science 2007

INSTRUCTIONAL DESIGN: How did the teacher design an inquiry-based science learning unit to support the development of science understanding by all students in class?

Performance Indicators	Performance Continuum			
I.1 Opportunities to develop understanding of science concepts	The portfolio described a unit focused on the learning of topic-related science facts and definitions.	The portfolio described a unit focused on the learning of topic-related science facts and concepts.	The portfolio described a unit focused on the learning of a coherent set of science facts, processes and concepts.	The portfolio described a unit focused on the exploration of the relationship of topic-specific facts, processes and concepts to a broader science conceptual framework.
I.2 Opportunities to develop abilities of science inquiry	Unit's activities provided students with opportunities to apply science process skills and verify given information.	Unit's activities provided students with opportunities to apply some inquiry skills to collect data about unit-related questions.	Unit's activities provided students with opportunities to apply inquiry skills to explore unit-related questions.	Unit's activities provided students with opportunities to apply inquiry skills to explore unit-related questions and construct evidence-based explanations.
I.3 Opportunities to explore science-related matters	The unit included limited opportunities for students to connect the science they learn to social and/or technological challenges.	The unit included opportunities for students to describe how the science they learn is connected to social and/or technological challenges.	The unit included opportunities for students to examine how the science they learn is connected to social and/or technological challenges.	The unit included opportunities for students to use the science they learn to investigate and express informed opinions about social and/or technological challenges.
I.4 Considerations of students' learning needs	There was limited evidence that the teacher used knowledge of students' learning needs to design instruction.	The teacher designed instruction to address students' general learning needs.	The teacher designed instruction to address students' general and academic learning needs.	The teacher designed instruction to address students' general and specific academic learning needs and interests.

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INSTRUCTIONAL IMPLEMENTATION: How did the teacher apply inquiry-based pedagogy to create a supportive learning environment in which students develop understanding of the content and nature of science?

Performance Indicators	Performance Continuum			
II.1 Engagement in the lab activity	In the featured lab activity the teacher provided students with limited opportunities to conduct science investigations and share their findings.	In the featured lab activity the teacher engaged students in conducting science investigations and sharing their findings.	In the featured lab activity the teacher engaged students in designing and conducting science investigations and discussing the meaning of the findings.	In the featured lab activity the teacher engaged students in identifying specific science questions, designing and conducting investigations and articulating evidence-based explanations.
II.2 Engagement in the STS activity	In the featured STS activity the teacher provided students with limited opportunities to learn how to search for and present information about science/technology topics.	In the featured STS activity the teacher facilitated students' search for and presentation of relevant information about science/technology topics.	In the featured STS activity the teacher facilitated students' search, analysis and presentation of credible and relevant information about science/technology issues.	In the featured STS activity the teacher engaged students in the search, analysis and presentation of credible and relevant information about a science/technology issue, and promoted critical examination of different viewpoints.
II.3 Instructional strategies and resources	The teacher used instructional strategies and resources that provided students with limited opportunities for active science learning.	The teacher used instructional strategies and resources to engage students in active science learning.	The teacher used instructional strategies and resources to engage students in active and collaborative science learning.	The teacher used instructional strategies and resources to engage students in active, challenging and collaborative science learning.

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ASSESSMENT OF STUDENT LEARNING: How did the teacher used assessment to monitor learning, evaluate performance and communicate with students about the quality of their work?

Performance Indicators	Performance Continuum			
III.1 Daily monitoring	The teacher monitored students' completion of tasks or activities	The teacher monitored students' progress towards developing understanding of the lesson's content.	The teacher monitored students' progress towards developing understanding of lessons' concepts.	The teacher monitored students' progress toward developing understanding of the unit's main concepts and processes.
III.2 Instructional adjustments	Findings about student learning were rarely used to adjust instruction	Findings about student learning were used to adjust pace and procedures, when needed.	Findings about student learning were used to adjust instruction for the whole class, when needed.	Findings about student learning were used adjust instruction for the whole class and specific groups of students, when needed.
III.3 Evaluation criteria for students' work on the lab and STS activities	a. The evaluation criteria for students' work on both the lab and STS activities were loosely related to the unit's learning objectives. b. The evaluation criteria for students' work on both the lab and STS activities were communicated in vague terms.	The evaluation criteria for students' work on either the lab or the STS activity were clear and related to the unit's learning objectives.	The evaluation criteria for students' work on both the lab and the STS activities were clear and related to the unit's learning objectives.	The evaluation criteria for students' work on both the lab and STS activities were clear, related to the unit's learning objectives and consistently applied.
III.4 Unit's summative assessment	The summative assessment provided information mainly on students' ability to provide definitions to science terms.	The summative assessment provided information on students' ability to describe unit-related concepts and/or perform calculations to solve problems.	The summative assessment provided information on students' ability to explain unit-related concepts and/or apply scientific formulas to solve problems.	The summative assessment provided information on students' ability to explain unit-related concepts and apply inquiry skills to solve problems.
III.5 Feedback about the quality of student work	a. Feedback to students about the quality of their work was limited. b. Feedback to students about the quality of their work was inaccurate or unclear.	Feedback to students about the quality of their work was generally accurate and included some comments about strengths and/or weaknesses.	Feedback to students about the quality of their work was specific and accurate and included comments about strengths and weaknesses.	Feedback to students about the quality of their work was specific and accurate, included comments about strengths and weaknesses, and provided suggestions to help students improve their performance.

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ANALYSIS OF LEARNING AND TEACHING: How did the teacher analyze learning and teaching and plan sound instructional improvements

Performance Indicators	Performance Continuum			
IV.1 Analysis of student learning	The teacher's commentary on student learning focused on task completion, grades or behavior.	The teacher's commentary on student learning focused on student ability to explain content.	The teacher's commentary on student learning focused on students' development of conceptual understanding, and some of the conclusions were supported by student work.	The teacher's commentary on student learning focused on students' development of conceptual understanding and inquiry skills, and the conclusions were supported by student work.
IV.2 Reflection on practice	In the reflective commentary the teacher identified limited connections between teaching practices and student learning.	In the reflective commentary the teacher identified general connections between teaching practices and student learning.	In the reflective commentary the teacher identified specific connections between teaching practices and student learning.	In the reflective commentary the teacher identified specific connections between teaching practices and student learning, and based on these connections identified relevant instructional changes.